

## CLAIMS

1. A method of detecting in an electronic article  
5 surveillance system whether an alarm condition exists,  
the article surveillance system emitting, in transmission  
pulses, an electromagnetic field and receiving, between  
the transmission pulses, reply signals from at least one  
alarm label which is located within the surveillance zone  
10 of the article surveillance system, c h a r a c t e r -  
i s e d by the steps of  
after completed transmission of a transmission  
pulse, sampling (11) a received reply signal,  
identifying (19) zero crossings of the sampled reply  
15 signal,  
determining (19) agreement between phase positions  
of the zero crossings and corresponding phase positions  
of zero crossings of a reply signal, received and sampled  
after a previously emitted transmission pulse, and  
20 making (21, 23) an alarm decision on the basis of  
the degree of agreement in phase position.
2. A method as claimed in claim 1, in which said  
previously emitted transmission pulse is the preceding  
transmission pulse.
- 25 3. A method as claimed in claim 1 or 2, in which an  
alarm is initiated if the degree of agreement in phase  
position exceeds a predetermined value.
4. A method as claimed in any one of the preceding  
claims, in which the alarm decision is made on the basis  
30 of an additional characteristic of the received reply  
signal.
5. A method as claimed in claim 4, in which the  
additional characteristic concerns the envelope of the  
received reply signal.
- 35 6. An electronic article surveillance system, com-  
prising means for detecting whether an alarm condition  
exists, which article surveillance system in transmission

pulses emits an electromagnetic field and between the transmission pulses receives reply signals from at least one alarm label which is located within the surveillance zone of the article surveillance system, c h a r a c -

5 t e r i s e d b y

means (27) for sampling a response signal, received after completed transmission of a transmission pulse,

means (33) for identifying zero crossings of the sampled reply signal,

10 means (33) for determining agreement between phase positions of the zero crossings and corresponding phase positions of zero crossings of a reply signal, received and sampled after a previously emitted transmission pulse and,

15 means (33) for making an alarm decision on the basis of the degree of agreement in phase position.

7. An electronic article surveillance system as claimed in claim 6, in which said previously emitted transmission pulse is the preceding transmission pulse.

20 8. An electronic article surveillance system as claimed in claim 6 or 7, in which an alarm is initiated if the degree of agreement in phase position exceeds a predetermined value.

25 9. An electronic article surveillance system as claimed in any one of claims 6-8, in which the alarm decision is made on the basis of an additional characteristic of the received reply signal.

30 10. An electronic article surveillance system as claimed in claim 9, in which the additional characteristic concerns the envelope of the received reply signal.